

REMARKS

This reply encompasses a bona fide attempt to overcome the rejections raised by the Examiner and presents amendments as well as reasons why the applicants believe that the claimed invention is novel and unobvious over the closest prior art of record, thereby placing the present application in a condition for allowance.

Regarding Claim Status

Claims 1-35 were presented for examination. Claims 1-35 were rejected. Claims 1, 10, 21 and 25 are amended herein. Support for the amendments presented herein can be found in the specification as originally filed, *see, e.g.*, p.7, lines 6, 13 and 15. By this Amendment, claims 1-35 are pending.

Regarding Objections to the Drawings

The drawings have been amended to overcome the examiner's objections.

Regarding Objections to the Specification

The specification and claims have been amended to overcome the examiner's objections. With regard to item iii., the examiner's attention is directed to page 19, lines 9 and 10, wherein k is defined as a variable in the relationship between force F and elongation ΔL , equal to AE/L .

Regarding 35 U.S.C. § 112 Rejections

Claims 16, 17, 19, 31 and 33 were rejected under 35 U.S.C. 112, first paragraph, for failing to comply with the enablement requirement. Applicants respectfully disagree with this rejection as a person of ordinary skill in the art of computer modeling would have no doubt how to make and use the invention as set forth in the claims. For example, page 3, line 29 through page 6, line 24 of the specification discusses prior art modeling methods. Compared to the prior art, this invention is computationally simple, fast, portable, and efficient. (See page 6, lines 25-30 in the specification.) Applicants submit that the idea of programming a portable device with a computer invention was within the general knowledge of one skilled in art at the time of the invention.

Similarly, page 36, lines 21-23, of the specification states that “various changes, substitutions, and alterations could be made herein without departing from the principles and the scope of the invention”. Using a client-server architecture, network environment and portable device are obvious implementations of the invention that would have been well within the general knowledge of one skilled in the art at the time of the invention.

Claims 22 and 29 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite due to insufficient antecedent basis. The examiner’s attention is respectfully directed towards line 6 of claim 22, which provides the proper antecedent basis for line 8 of claim 22. The examiner’s attention is also respectfully directed towards line 7 of claim 29, which provides the proper antecedent basis for line 10 of claim 29.

Regarding 35 U.S.C. § 101 Rejections

Claims 1-9 were rejected under 35 U.S.C. 101 as being drawn to non-statutory matter.

Applicants submit that the amended claim 1 overcomes this rejection. Amended claim 1 is reproduced below for the convenience of the examiner, with relevant words underlined.

Amended Claim 1. Long Elements Method (LEM) for real time physically based modeling of a deformable medium, comprising the steps of:

constructing a plurality of long elements in a computer; and
configuring said computer with a meshing strategy based on said plurality of long elements wherein number of said plurality of long elements is proportional to b^2 where b is length of a side of said deformable medium thereby substantially reducing number of time steps required by said modeling.

The examiner also states that applicants have claimed an invention that does not produce a useful, concrete and tangible result. Examiner's attention is respectfully drawn to the paragraph starting on page 7, line 10, in which applicants state that the "LEM is well suited for real time animation and virtual environment multi-modal interactions and particularly useful for soft tissue real time simulation using graphic and haptic rendering"; the paragraph starting on page 8, line 3, in which the LEM is useful for providing "a full dynamic simulation of deformable media, including localized and/or global deformations of elastic, plastic, and/or highly deformable material"; and the paragraph starting on page 14, line 3, in which applicants state that "Potential LEM applications include industrial

design, character and animated object simulation, real time simulation of objects ranging from furniture to human organs.”

Applicants therefore respectfully submit that 35 U.S.C. 101 does not apply to claims 1-9. The usefulness, tangible structure, and concrete result are inherently set forth in claims 1-9 as one of ordinary skill in the art would have readily recognized at the time of the invention.

Regarding 35 U.S.C. § 102 Rejections

Claims 1-35 were rejected under 35 U.S.C. 102(a) as being anticipated by Ivan F. Costa and Remis Balaniuk, “LEM-An approach for real time physically based soft tissue simulation” proceeding of the 2001 IEEE, pages 2337-2343, International Conference on Robotics and Automation, Seoul, Korea, May 21-26, 2001.

This reference is hereby disqualified by the accompanying declaration under 37 C.F.R. 1.132 stating that the subject matter of the above-cited reference was not invented “by others”, rendering the rejections moot.

Conclusion

For the foregoing reasons, it is respectfully submitted that the claimed invention satisfies 35 U.S.C. 112 and 101, and that the reference cited under 35 U.S.C. 102(a) should be disqualified. Favorable consideration and a Notice of Allowance of all pending claims 1-35 are therefore earnestly solicited.

This Response/Amendment is submitted to be complete and proper in that it places the present application in a condition for allowance without adding new matter. The Examiner is sincerely invited to telephone the undersigned at 650-331-8417 for discussing an Examiner's Amendment or any suggested actions for accelerating prosecution and moving the present application to allowance.

Respectfully submitted,



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